AMENDMENTS TO THE CLAIMS:

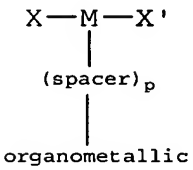
1-31. (Canceled)

32. (New) A process for preparing a material capable of luminescence, said material comprising:

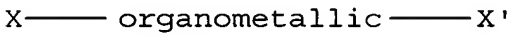
a polymer or an oligomer and an organometallic group, wherein the polymer or oligomer is at least partially conjugated, the organometallic group is covalently bound to the polymer or oligomer, and at least one of the nature, location, and proportion of the polymer or oligomer and the organometallic group is selected so that the luminescence is predominantly phosphorescence;

said process including:

using Suzuki polymerization to react at least one first monomer with a plurality of second monomers which are different from the first monomer, wherein each monomer comprises an aryl or heteroaryl group and has at least two reactive groups selected from the group consisting of halide groups, boronic acid groups, boronic ester groups, and borane groups, and the first monomer has a general formula selected from the group consisting of formula IV and formula V:



(IV)



(V)

wherein the organometallic group in the formula V includes a carbon-metal bond, X and X' each is a reactive group independently selected from the group consisting of halide groups, boronic acid groups, boronic ester groups, and borane groups, $p \geq o$, and M is a group comprising an aryl or heteroaryl group.

33. (New) A process according to claim 32, wherein a plurality of first monomers is reacted with the plurality of second monomers.

34. (New) A process according to claim 33, wherein the plurality of first monomers is selected so that the material comprises the organometallic group in an amount in the range of from 1 to 10% by weight.

35. (New) A process according to claim 32, wherein at least one of X and X' is a boronic acid group.

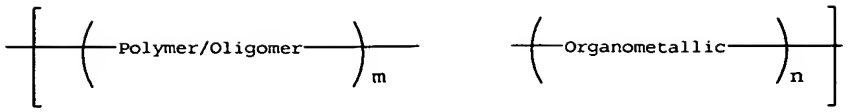
36. (New) A process according to claim 32, wherein the polymer or oligomer is linear.

37. (New) A process according to claim 32, wherein the second monomer comprises a group selected from the group consisting of 2,7-linked 9,9 disubstituted fluorenes, p-linked dialkyl phenylenes, p-linked disubstituted phenylenes, phenylene vinylenes, 2,5-linked benzothiadiazoles, 2,5-linked substituted benzothiadiazoles, 2,5-linked disubstituted benzothiadiazoles, 2,5-linked substituted thiophenes, 2,5-linked unsubstituted thiophenes, and triarylamines.

38. (New) A process according to claim 32, wherein the organometallic group contains a transition metal.

39. (New) A process according to claim 38, wherein the organometallic group contains a precious metal.

40. (New) A process according to claim 32, wherein the material has a general formula III:



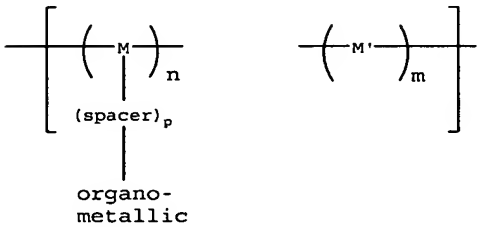
(III)

wherein $m \geq 1$ and $n \geq 1$.

41. (New) A process according to claim 40, wherein the first monomer has the general formula V, the organometallic group represents a metal surrounded by a number of ligands, and X and X' are bound to the same ligand in the organometallic group.

42. (New) A process according to claim 32, wherein the first monomer has the general formula IV, and the organometallic group includes a carbon-metal bond.

43. (New) A process according to claim 32, wherein the material has a general formula I:



(I)

wherein $m \geq 2$, $n \geq 1$, $p \geq 0$, and M and M' each independently comprises an aryl or heteroaryl group.

44. (New) A process according to claim 43, wherein M and M' each independently comprises a group selected from the group consisting of 2,7-linked 9,9 disubstituted fluorenes, p-linked dialkyl phenylenes, p-linked disubstituted phenylenes, phenylene vinylenes, 2,5-linked benzothiadiazoles, 2,5-linked substituted

benzothiadiazoles, 2,5-linked disubstituted benzothiadiazoles, 2,5-linked substituted thiophenes, 2,5-linked unsubstituted thiophenes, and triarylamines.

45. (New) A process according to claim 32, wherein the organometallic group is conjugatively bound to the polymer or oligomer in the material.

46. (New) A process according to claim 43, wherein the spacer represents a non-conjugated spacer group.

47. (New) A method of making an optical device, including:

preparing a material capable of luminescence according to the process of claim 32.

48. (New) A method according to claim 47, further including depositing the material capable of luminescence on a substrate by solution-processing.

49. (New) A method according to claim 47, wherein the optical device comprises an electroluminescent device.

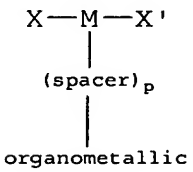
50. (New) A method according to claim 49, wherein the electroluminescent device comprises:

a first charge carrier injecting layer for injecting positive charge carriers;

a second charge carrier injecting layer for injecting negative charge carriers; and,

a light-emissive layer located between the first and second charge carrier injecting layers for generating light, said light-emissive layer comprising the material capable of luminescence.

51. (New) A monomer for use in a polymerization reaction having a general formula selected from the group consisting of formula IV and formula V:



(IV)

X—— organometallic ——X' (V)

wherein X and X' each is a reactive group independently selected from the group consisting of halide groups, boronic acid groups, boronic ester groups and borane groups, $p \geq o$, M is a group comprising an aryl or heteroaryl group, the organometallic group represents a metal surrounded by a number of ligands, the organometallic group in the formula V includes a carbon-metal bond, and X and X' in the formula V are bound to the same ligand in the organometallic group.

52. (New) A monomer according to claim 51, wherein at least one of X and X' is a boronic acid group.

53. (New) A monomer according to claim 51, wherein the organometallic group contains a transition metal.

54. (New) A monomer according to claim 53, wherein the organometallic group contains a precious metal.

55. (New) A monomer according to claim 51, wherein the monomer has the general formula IV, and the organometallic group includes a carbon-metal bond.

56. (New) A monomer according to claim 51, wherein the monomer has the general formula IV, and the spacer represents a non-conjugated spacer group.

57. (New) A monomer according to claim 51, wherein the monomer has the general formula IV, and M comprises a group selected from the group consisting of 2,7-linked 9,9 disubstituted fluorenes, p-linked dialkyl phenylenes, p-linked disubstituted phenylenes, phenylene vinylenes, 2,5-linked benzothiadiazoles, 2,5-linked substituted benzothiadiazoles, 2,5-linked disubstituted benzothiadiazoles, 2,5-linked substituted thiophenes, 2,5-linked unsubstituted thiophenes, and triarylamines.

58. (New) A material capable of luminescence, said material comprising a polymer or oligomer and an organometallic group, wherein the polymer or oligomer is at least partially conjugated, the organometallic group is covalently bound to the polymer or oligomer, and at least one of the nature, location, and proportion of the polymer or oligomer and the organometallic group in the material is selected so that the luminescence is predominantly phosphorescence, wherein the organometallic group is pendent from the backbone of the polymer or oligomer, and a non-conjugated spacer group separates the organometallic group from the backbone of the polymer or oligomer.

59. (New) A material according to claim 58, wherein the polymer or oligomer is linear.

60. (New) A material according to claim 58, comprising at least two organometallic groups.

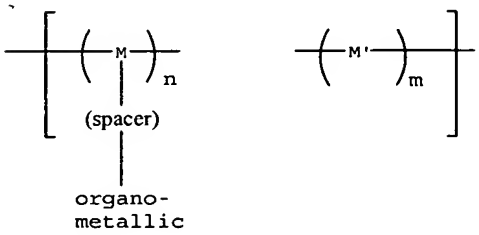
61. (New) A material according to claim 58, wherein the organometallic group contains a transition metal.

62. (New) A material according to claim 61, wherein the organometallic group contains a precious metal.

63. (New) A material according to claim 58, wherein the material comprises the organometallic group in an amount in the range from 1 to 10% by weight.

64. (New) A material according to claim 58, wherein the non-conjugated spacer group is selected from the group consisting of alkyl groups and alkyl ether groups.

65. (New) A material according to claim 58 having a general formula I:



(I)

wherein $m \geq 2$, $n \geq 1$, the spacer represents a non-conjugated spacer group, and M and M' each independently comprises an aryl or heteroaryl group.

66. (New) A material according to claim 65, wherein M and M' each independently comprises a group selected from the group consisting of 2,7-linked 9,9 disubstituted fluorenes, p-linked dialkyl phenylenes, p-linked disubstituted phenylenes, phenylene vinylenes, 2,5-linked benzothiadiazoles, 2,5-linked substituted benzothiadiazoles, 2,5-linked disubstituted benzothiadiazoles, 2,5-linked substituted thiophenes, 2,5-linked unsubstituted thiophenes, and triarylamines.

67. (New) A material according to claim 58, wherein the material is solution processable.

68. (New) A material according to claim 58, wherein the organometallic group contains a conjugated bidentate ligand.

69. (New) A material according to claim 68, wherein the organometallic group contains a conjugated bidentate ligand comprising at least one nitrogen atom for coordination with the metal of the organometallic group.

70. (New) A material according to claim 58, wherein the organometallic group contains a ligand comprising a group selected from the group consisting of 2,7-linked 9,9 disubstituted fluorenes, p-linked dialkyl phenylenes, p-linked disubstituted phenylenes, phenylene vinylenes, 2,5-linked benzothiadiazoles, 2,5-linked substituted benzothiadiazoles, 2,5-linked disubstituted benzothiadiazoles, 2,5-linked substituted thiophenes, 2,5-linked unsubstituted thiophenes, and triarylamines.

71. (New) A material according to claim 58, wherein the organometallic group comprises a cyclometalated precious metal complex.

72. (New) A material according to claim 71, wherein the cyclometalated precious metal complex is selected from the group consisting of platinum polyynes, platinum-porphyrins, and iridium tris(phenylpyridine) complexes.

73. (New) An optical device, which comprises a substrate and a material as defined in claim 58 supported on the substrate.

74. (New) An optical device according to claim 73, wherein the device is an electroluminescent device comprising:

a first charge carrier injecting layer for injecting positive charge carriers;

a second charge carrier injecting layer for injecting negative charge carriers; and,

a light-emissive layer located between the first and second charge carrier injecting layers for generating light and comprising a material as defined in claim 58.